

CLAIMS

- 5 1. A method for improving the durability of an image on an imaging material, comprising directing infrared radiation upon exposed areas of a processed imaging material.
- 10 2. The method of claim 1, wherein the processed imaging material comprises a developed printing plate and wherein improving durability of the imaging material increases the press run length of the printing plate.
- 15 3. The method of claim 2 further comprising:
imagewise exposing the printing plate to form an exposed printing plate; and
developing the exposed printing plate to provide the developed printing plate.
- 20 4. The method of claim 3, wherein at least one of the directing and developing steps is carried out off press.
- 25 5. The method of claim 3, wherein at least one of the directing and developing steps is carried out on press.
6. The method of claim 2, wherein the step of directing comprises at least one of flooding the developed printing plate with infrared radiation and raster scanning infrared radiation onto the developed printing plate.
- 30 7. The method of claim 2, wherein the directing step comprising positioning infrared lamps adjacent the developed printing plate, wherein the infrared lamps emit infrared radiation having a wavelength of about 780 nm to about 1400 nm.
8. The method of claim 7, wherein the infrared lamps emit infrared radiation having a wavelength in a range of about 800 nm to about 850 nm.

9. The method of claim 2, wherein the directing step heats the developed printing plate to a temperature in the range from about 140°C to about 160°C.

10. The method of claim 2, wherein the directing step comprises directing the infrared radiation incident upon the developed printing plate for about 15 seconds to about 25 seconds.

11. The method of claim 2, further comprising:

10 heating the printing plate before the printing plate is developed;
 cooling the printing plate before the printing plate is developed;
 rinsing the developed printing plate; and
 applying a finisher to the developed printing plate.

12. The method of claim 2, wherein the developed printing plate comprises a
15 thermally-imageable, negative-working lithographic printing plate.

13. The method of claim 2, further comprising controlling heating of the developed printing plate by controlling at least one of dwell time of the exposed material when adjacent the infrared radiation source, distance of the infrared source from the image-20 receptive material, output of the infrared radiation source.

14. The method of claim 1, wherein the processed imaging material comprises a
15 processed resist, and wherein the method further comprises:
 imagewise exposing the resist to form an exposed resist; and
25 etching the exposed resist to form the processed resist.

15. An imaging material prepared by the method of claim 1.

16. A negative-working printing plate prepared by the method of claim 2.

30

17. A resist prepared by the method of claim 14.

18. An apparatus for using the method of claim 1.

19. An apparatus for the production of an imaged material, said apparatus comprising:

- (a) an imaging device;
- (b) an optional bake oven;
- (c) a processor; and
- (d) a post-process treatment unit

5 characterized in that the post-process treatment unit comprises a unit comprising an infrared radiation source adapted to heat the imaged material to improve durability or toughening of the image.

10

20. The apparatus of claim 18 or 19 comprising an infrared lamp that emit infrared radiation in the range of about 780 nm to about 1400 nm.

15. The apparatus of claim 18 or 19, wherein the imaging material comprises a printing plate, and wherein the apparatus further comprises an imaging device for image-wise exposing the printing plate and a processor for developing the printing plate.

22. The apparatus of claim 18 or 19, wherein the imaging material comprises a printing plate, and wherein the apparatus further comprises a printing press.

20

23. The apparatus of claim 18 or 19, further comprising at least one of a cooling device, a rinse applicator, and a finisher applicator.

25. The apparatus of claim 18 or 19, wherein the imaging material comprises a resist, and wherein the apparatus further comprises an imaging device for image-wise exposing the resist and a processor for etching the resist.